

MEMORANDUM

DATE: July 2, 2015

TO: City of Issaquah

FROM: Jeff Schramm
TENW

SUBJECT: Newport Way Senior Housing Traffic Assessment:
Trip Generation, Concurrency, and Site Access Evaluation
TENW Project No. 4966

This memorandum documents the traffic analysis for the proposed Newport Way Senior Housing residential development and provides the information required for the transportation concurrency application and summarizes the trip generation and site access evaluation on Newport Way NW.

Project Description

The proposed Newport Way Senior Housing development site is located on the north and east side of Newport Way NW south I-90, and west of SR 900 as shown in Attachment A. The preliminary site plan includes 136 senior housing attached units. The existing site is vacant. Primary vehicle access to the site would be provided via a single access intersecting with NW Newport Way NW approximately 1,100 feet north of the existing Pacific Elm Drive intersection that will share a new signalized access with the proposed Gateway Apartments development. Full project buildout is anticipated to be 2018. A preliminary site plan is provided in Attachment B.

Trip Generation Estimates

The trip generation estimate for the proposed Newport Way Senior Housing development was based on the methodology included in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 9th edition for Land Use Code (LUC) 252 (Senior Housing attached). The resulting weekday daily, AM, and PM peak hour trip generation associated with the proposed project is summarized in Table 1.

Table 1
Trip Generation Summary – Gateway Apartments

Time Period	ITE Trip Rate	New Vehicle Trips Generated		
		In	Out	Total
Weekday Daily	3.44	234	234	468
Weekday AM Peak Hour	0.20	9	18	27
Weekday PM Peak Hour	0.25	18	16	34

As shown in Table 1, the proposed project is estimated to 468 new weekday daily trips, with 27 new trips occurring during the weekday AM peak hour (9 in, 18 out) and 34 during the weekday PM peak (18 in, 16 out).

Transportation Concurrency

The information provided in this memo will also be used for the concurrency application. A concurrency application and fee will be submitted separately. A copy of the concurrency application is provided in Attachment C.

Site Access Evaluation

This section addresses the design, function, and operation of the proposed access onto Newport Way NW. Included are frontage requirements, turn lane evaluation, intersection LOS, and sight distance evaluation.

Frontage Improvements

The project proposes half-street frontage along Newport Way that would include road widening to accommodate a new 12-foot-wide center turn lane, 10-foot through lane, 5-foot bicycle lane, 5-foot landscape strip, and 10-foot sidewalk. A right-turn deceleration lane would not be warranted with the site traffic generation. Note that an Administrative Adjustment of Standards (AAS) has been submitted related to the proposed half-street frontage requirement.

Intersection LOS Analysis

The weekday AM and PM peak hour traffic volumes were estimated for future 2018 conditions based on peak hour counts collected by All Traffic Data on Wednesday, November 12, 2014, as well as application of a two percent annual growth rate on Newport Way NW. Traffic generated by the adjacent Gateway Apartments project were also included in the 2018 baseline without-project traffic volumes.

Traffic generated by the proposed Newport Way Senior Housing project were assigned to the site access in the AM peak hour based on a distribution split of 20 percent north and 80 percent south. The PM peak hour traffic generation was assigned to the site access based on a distribution split of 65 percent north and 35 percent south. The AM and PM peak hour traffic generated by the Senior Housing project were added to the without-project volumes resulting in the 2018 with-project volumes. Attachment D illustrates the existing and future traffic volumes at the site access intersection on Newport for both AM and PM peak hour conditions.

Weekday AM and PM peak hour LOS were also evaluated for future with-project conditions at the proposed site access intersection assuming a stop sign controls traffic from the project access. The results of the analysis are summarized in the Table 3 below.

Table 3
Newport Way Site Access Peak Hour LOS Summary

Location	AM Peak Hour		PM Peak Hour	
	LOS ¹	Delay ² (sec/veh)	LOS ¹	Delay ² (sec/veh)
Site Access Driveway on Newport Way				
Side-Street Turns	C	15.6	B	14.1
Southbound Left-Turn into Site	A	9.4	A	8.7

¹ LOS = Level of Service.

² Delay refers to average control delay in seconds per vehicle

As shown in Table 3, the turning movements at the proposed site access onto Newport Way NW are anticipated to operate at LOS C or better in the AM and PM peak hours. The LOS results assume the presence of a center turn lane that will allow vehicles to utilize for a two-step maneuver when exiting the site. The detailed LOS results are provided in Attachment E.

Right-Turn Evaluation

Inbound Right-Turn Lane Analysis (Newport Way NW Northbound Right-Turn Movement)

The WSDOT *Design Manual* outlines the following guidelines in consideration of right-turn lanes at unsignalized intersections:

- Recommendation from Exhibit 1310-19 (*Design Manual*).
- A collision study indicates an overall crash reduction with a right-turn lane.
- The presence of pedestrians requires right-turning vehicles to stop.
- Restrictive geometrics require right-turning vehicles to slow greatly below the speed of the through traffic.
- There is less than decision sight distance for traffic approaching the intersection.

Based on our analysis of the estimated future year 2018 with-project PM peak hour traffic volumes at the site access location on Newport Way NW using *Exhibit 1310-19*, the westbound through and right-turn volumes indicate that a right-turn lane would not be justified.

Sight Distance Evaluation

Attachment F illustrates the entering sight distance at the location of the proposed access onto Newport Way. As shown, minimum entering sight distance standards would be met for a vehicle turning left or right from the site access location onto Newport Way.

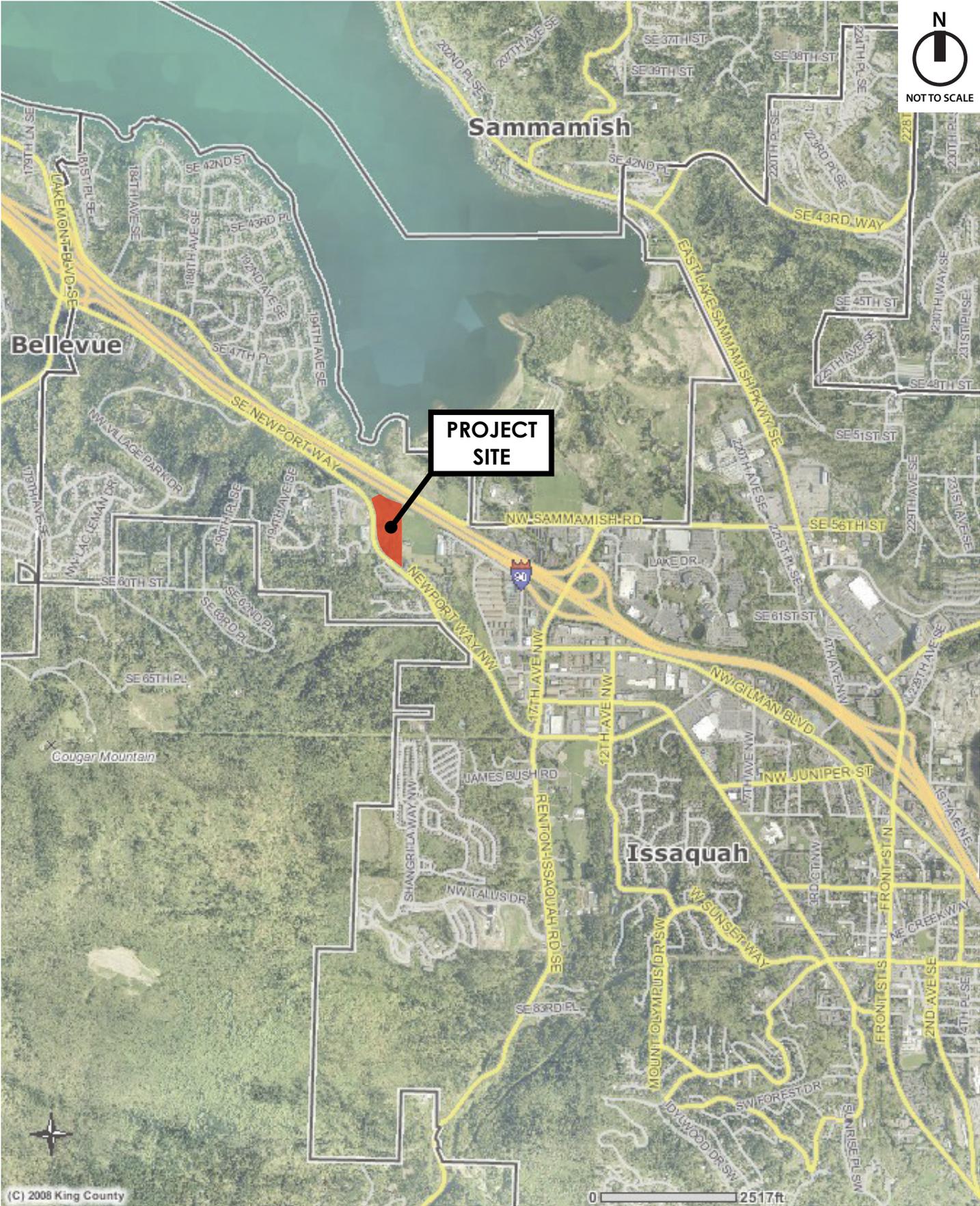
If you have any questions regarding the information presented in this analysis, please contact me at 425-250-0581 or schramm@tenw.com.

cc: Mike Milhaupt - The Wolff Company
Derrick Overbay - VIA Architects
Jeff Haynie, P.E. - TENW
Chris Bicket, P.E. - TENW

Attachments: A. Site Vicinity
B. Preliminary Site Plan
C. Concurrency Application
D. Traffic Volumes
E. LOS Analysis Results
F. Sight Distance Exhibit

ATTACHMENT A

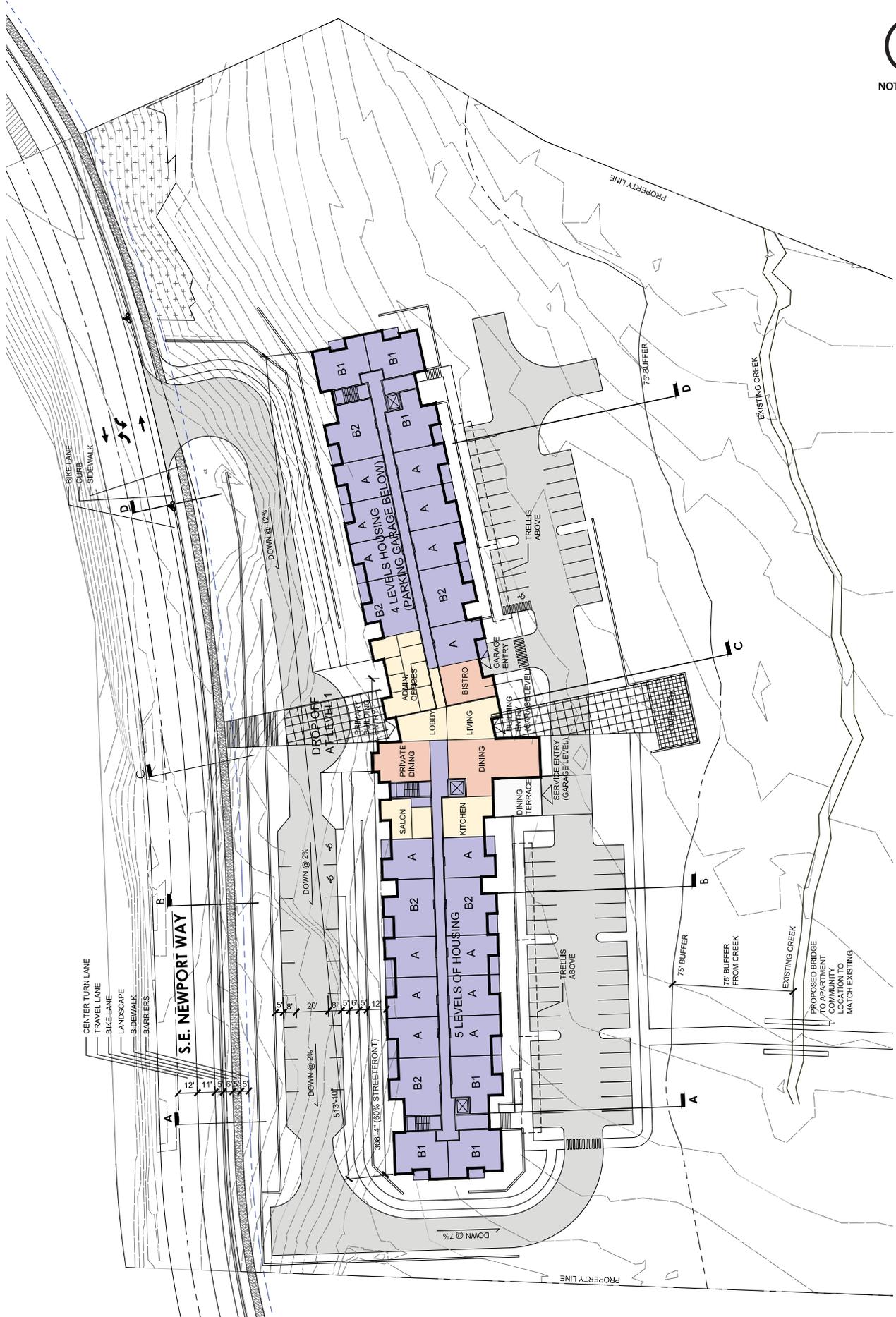
Site Vicinity



Attachment A: Site Vicinity

ATTACHMENT B

Preliminary Site Plan

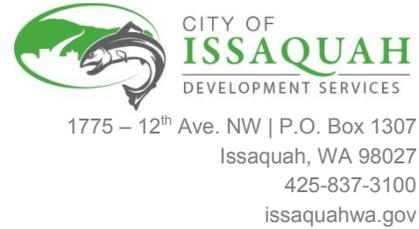


Attachment B: Preliminary Site Plan

ATTACHMENT C

Concurrency Application

Transportation Concurrency Certificate Application *with Trip Calculator*



This supplemental form provides the City of Issaquah with the information needed to issue a Concurrency Certificate for a development. Please complete the entire form and return it to the Permit Center.

The City's review will: 1) evaluate whether the proposed land use type, location, and size is consistent with the City's land use forecasts used for concurrency modeling, and, 2) the City will use the Trip Calculator to determine whether the proposed trips are within the citywide Trip Bank capacity.

A. General Information

Project Name: _____

Contact: _____ Phone: _____

B. Trip Calculator

Please complete the Trip Calculator to provide the applicant's estimate of how a development meets the citywide Trip Bank.

Prior Uses	Number	Unit of Measure	Trips per unit	Total
Proposed Uses				

Trips (Proposed): _____
 - Trips (Prior): _____
 Net Trips: _____

C. Concurrency Application Fee

A concurrency application fee is due at the time of your land use application submittal. Fee amount is calculated as:

(Net Trips) _____ X \$52.50 = _____ (fee includes technology surcharge)

D. Traffic Impact Analysis

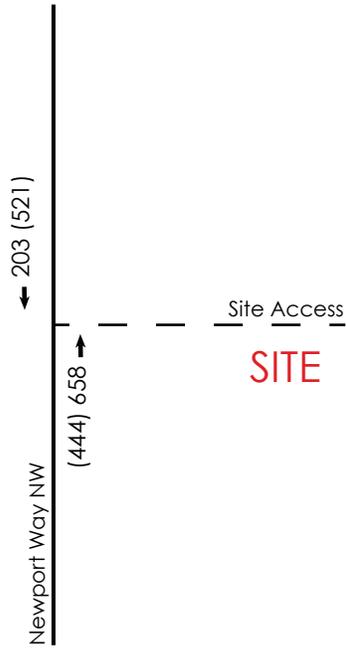
A Traffic Impact Analysis (TIA) is required if your project has a 30 or more net trip increase. A TIA may be required even if the 30-trip limit hasn't been met. Please see our [TIA requirements](#) for more information.

My project generates 30 or more trips and requires a Traffic Impact Analysis or staff has determined a TIA is required

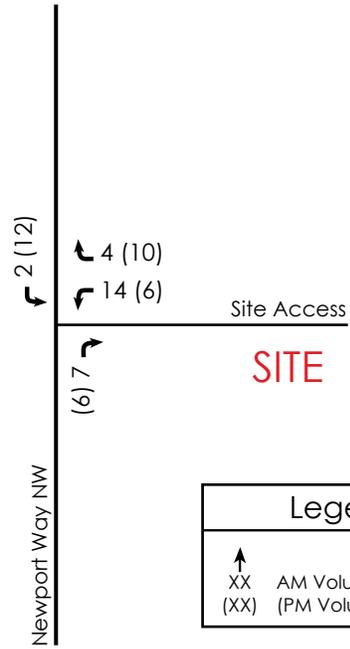
Staff Use Only	
Permit Number: _____	Date Received: _____
Staff Contact: _____	

ATTACHMENT D

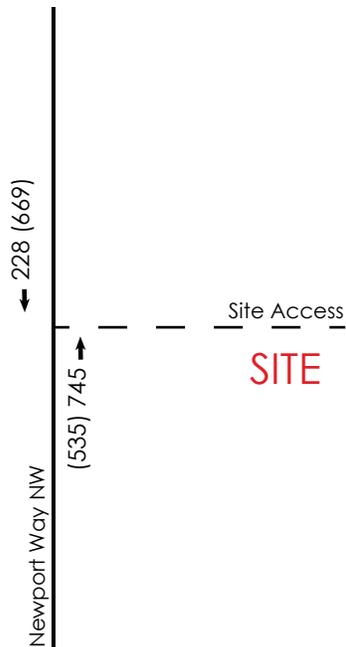
Traffic Volumes – AM and PM Peak Hours



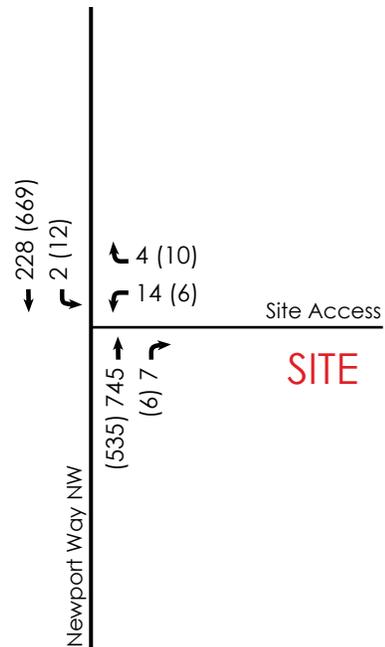
2015 Existing



Project Trip Assignment



2018 Future Traffic Volumes Without-Project



2018 Future Traffic Volumes With-Project

ATTACHMENT E

LOS Analysis Results

Lanes, Volumes, Timings
 1: Newport Way NW & Site Access

7/2/2015

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	14	4	745	7	2	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		40			40
Link Distance (ft)	374		493			502
Travel Time (s)	10.2		8.4			8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	14	4	745	7	2	228
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	15	4	810	8	2	248

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1066	814	0	0	817	0
Stage 1	814	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.209	-
Pot Cap-1 Maneuver	248	381	-	-	815	-
Stage 1	439	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	247	381	-	-	815	-
Mov Cap-2 Maneuver	355	-	-	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	360	815	-
HCM Lane V/C Ratio	-	-	0.054	0.003	-
HCM Control Delay (s)	-	-	15.6	9.4	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lanes, Volumes, Timings
 1: Newport Way NW & Site Access

7/2/2015

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	6	10	535	6	12	669
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	50	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		40			40
Link Distance (ft)	374		493			502
Travel Time (s)	10.2		8.4			8.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	6	10	535	6	12	669
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	1
Mvmt Flow	7	11	582	7	13	727

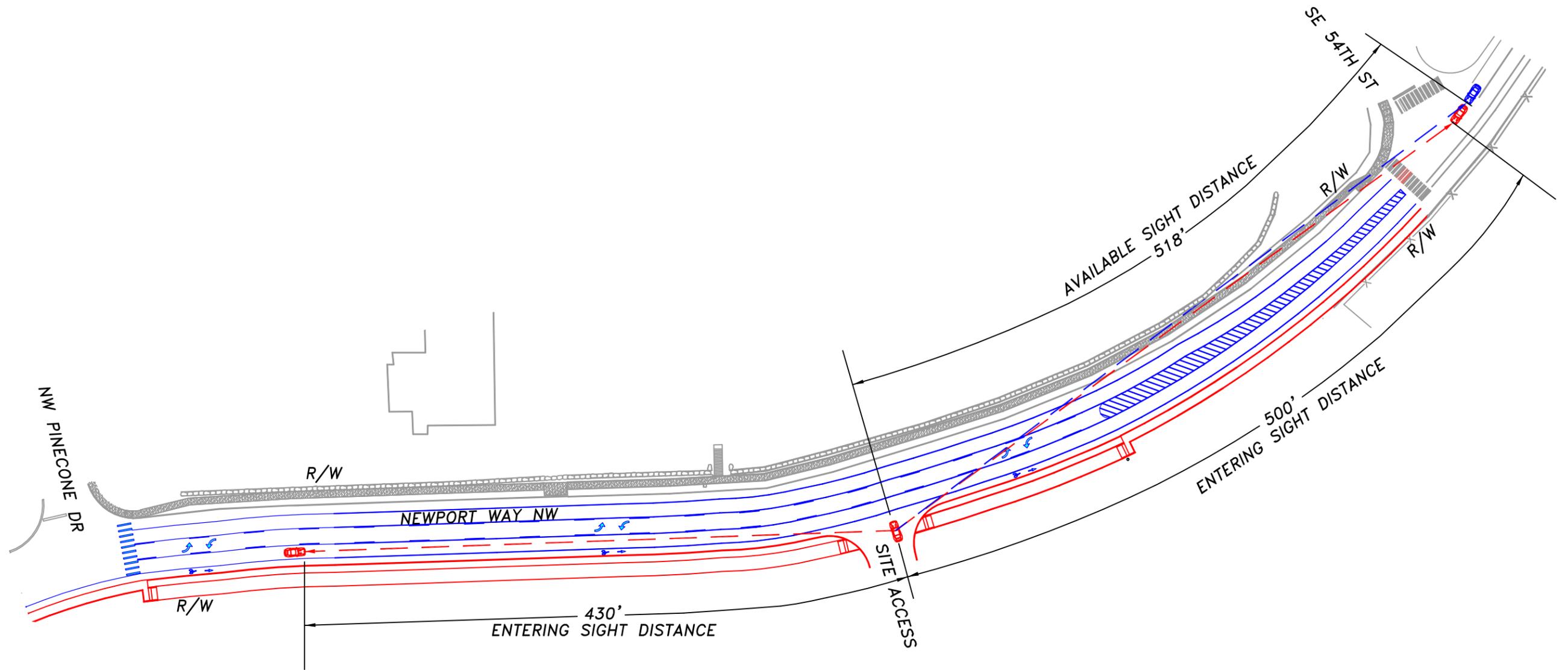
Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1338	585	0	0	588	0
Stage 1	585	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.209	-
Pot Cap-1 Maneuver	170	515	-	-	992	-
Stage 1	561	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	168	515	-	-	992	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	411	992	-
HCM Lane V/C Ratio	-	-	0.042	0.013	-
HCM Control Delay (s)	-	-	14.1	8.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

ATTACHMENT F

Entering Sight Distance Exhibit



ENTERING SIGHT DISTANCE

SPEED	LEFT TURNS	RIGHT TURNS
45 MPH	500 FT	430 FT

ISSAQUAH ADOPTED STREET STANDARDS
STANDARD DETAIL T-01

POSTED SPEED 40 MPH
DESIGN SPEED 45 MPH

LEGEND

	ESD AVAILABLE
	ESD REQUIRED 45 MPH

PRELIMINARY – FOR DISCUSSION ONLY



DATE:
06/25/2015



Transportation Engineering NorthWest

Transportation Planning | Design | Traffic Impact & Operations
11400 SE 8th Street, Suite 200, Bellevue, WA 98004 | Office (425) 889-6747

Project Contact: Elyse Hanson, P.E.
Phone: 425-250-5004

ISSAQUAH GATEWAY SENIOR HOMES
NEWPORT WAY NW, ISSAQUAH

ENTERING SIGHT DISTANCE

SHEET
1

OF
1